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Fire Department Disaster Management: What Can We Do?

Richard L. Knoff

Clay County Fire Rescue, Green Cove Springs, Florida

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The problem was that Clay County Fire Rescue (CCFR) did not have a standard operating procedure to follow after a large scale disaster that addresses initial disaster damage assessment done by the fire department. The purpose of the research was to identify what procedures the fire service uses to perform damage assessment after a disaster. The action research method was used to answer the research questions and develop a standard operating policy for CCFR to respond and conduct initial damage assessment for an all hazards approach to disaster. The research questions were: (a) What procedures are used by fire departments and other agencies to perform initial damage assessments after a disaster? (b) What are the requirements in the State of Florida for initial damage assessment for a large scale natural disaster? (c) What does the Clay County Emergency Management Plan (CEMP) require for initial damage assessment for a large scale disaster and does it meet state and federal requirements? (d) What policies are needed for CCFR to conduct initial damage assessment to meet State of Florida Division of Emergency Management and federal requirements? Procedures involved collecting fire department standard operating procedures and information from state and federal agencies that are responsible for damage assessment. The author developed a standard operating procedure to be used by CCFR to perform rapid damage assessment after any type of disaster in the community. This policy follows guidelines adopted by the State of Florida and the Florida Fire Chief's Association for initial damage assessment. The policy adopted by CCFR is recommended for other states to review and use. The policy is recommended for all Florida fire departments to adopt so that there is a statewide standard for initial damage

assessment and reporting. Many times fire departments provide aid to neighboring departments and it is crucial that everyone reports damage assessment using the same guidelines. Training is vital to the success of the adoption of the damage assessment policy. The recommendation is to train and exercise the policy with other policies related to disaster events prior to June of each year which is the start of hurricane season in Florida.

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Fire Department Disaster Management: What Can We Do?

Introduction

The problem is that Clay County Fire Rescue (CCFR) does not have a standard operating procedure to follow after a large scale disaster that addresses initial disaster damage assessment. The purpose of this applied research paper is to research what procedures the fire service uses to perform damage assessment after a disaster. This research will be used to develop policies for CCFR to perform initial damage assessment immediately following a disaster. The Clay County Emergency Management Plan (CEMP) will be reviewed to ensure compliance with current state and federal requirements for disaster damage assessment. The action research method will be used to develop policies for CCFR to conduct initial damage assessments to meet State of Florida Division of Emergency Management guidelines. The research questions were: (a) What procedures are used by fire departments and other agencies to perform initial damage assessments after a disaster? (b) What are the requirements in the State of Florida for initial damage assessment for a large scale natural disaster? (c) What does the Clay (CEMP) require for initial damage assessment for a large scale disaster and does it meet state and federal requirements? (d) What policies are needed for CCFR to conduct initial damage assessment to meet State of Florida Division of Emergency Management and federal requirements?

Background and Significance

CCFR was established in 1982 when all the volunteer fire departments were consolidated into one department to serve the unincorporated areas of Clay County. CCFR operates out of eleven career fire stations supported by additional volunteers and one completely volunteer station. CCFR operates with 160 career and 60 volunteer uniformed personnel. Clay County covers 644 square miles in northeast Florida. In 2008, the department responded to 16,986 calls

for emergency service according to a review of CCFR incidents from the Florida Fire Incident Reporting System. CCFR provides fire suppression, fire inspection/plans review, advanced life support transport service, hazardous materials response and special operations rescue. CCFR provides service to a population of 189,016. The community looks to the fire service after a disaster to be the leader in providing immediate relief and recovery. The Clay County Public Safety department is run by the Fire Chief and includes the Emergency Management Division and the Fire Rescue Division. The County Emergency Manager is the head of the Emergency Management Division and directs all operations when the Emergency Operations Center (EOC) is activated for any incident.

Community risk is determined by the community hazard multiplied by the vulnerability. The community hazard is any type of incident that cause harm to the community. This may be fires, natural disasters, acts of terrorism and hazardous material releases. Vulnerability is the impact such an event has on the community. From 1977 to 2007 there were 53 FEMA declared disasters in Florida. The Florida disasters varied by classification and included hurricanes, tornadoes, tropical storms, severe storms, severe flooding, high winds, high tides, severe freezes, severe winter weather and fire hazards from forest fires. Florida has more FEMA declared disaster events than all the other states except California and Texas. It is paramount that all fire service organizations understand the process for damage assessment and benefit for having an established plan and to practice that plan annually. The National Hurricane Center reported that Hurricane Dora directly hit the northeast Florida area in 1964 causing major destruction to Clay County and surrounding areas (National Hurricane Center, 2009). Public utility services were out for weeks during recovery. In order to have potable water the fire department pumped water out of the Green Cove Spring and delivered it into the fire hydrant to provide water to the public.

This went on for several days until the city water utility could be restored. There have been several other hurricanes that the outer bands have caused wind, rain and flood damage to Clay County. According to the Clay County Emergency Management Plan, the level of vulnerability for tropical cyclone and severe weather events is a high probability with a major impact. The proximity of Clay County to the Atlantic Ocean and the fact that the county borders the St. Johns River on the east boundary is likely to cause major wind and water damage from any category hurricane event. Clay County borders Jacksonville, which has a probability of 1 out of 100 to likely have a hurricane impact the area. The likelihood of a hurricane is much greater in south Florida in considering Miami, which has a probability of 1 in 6 or Palm Beach, which has a 1 in 7 chance. Many times the outer band of wind and rain affect Clay County from hurricanes and storms that hit central Florida. Tropical Storm Fay struck in August of 2008 causing severe weather damage to sixteen counties in Florida and Georgia. The storm dropped 17"-25" of rainfall causing up to 30" of flooding which resulted in major damage. 2008 was the fourth costliest hurricane season of record. There was 21 billion dollars in U.S. insured damages according to the Insurance Services Office (ISO) Property Claims Services (National Hurricane Center, n.d.). The water areas bordered by water have the highest population density and have the highest likelihood of storm damage. The town of Orange Park and the City of Green Cove Springs both border the St. Johns River. These communities contain major commercial and industrial structures that would be affected by storm damage. The consequences from these type events can affect every citizen, business person and visitor in Clay County. The consequences can include: power outages, flooding, erosion, evacuations, road closures, infrastructure destruction, agriculture damage, livestock issues and economic loss (Clay County, 2006).

During EOC activations for disasters, Clay County Public Safety has been overwhelmed during initial operations because of shortages of work force to accomplish tasks. Policies have been developed to address recall of an off duty shift to increase capabilities to manage a large scale incident. The Fire Rescue division is normally assigned a 24 hour shift with a three shift rotation schedule. When a forecasted disaster is expected, the division changes to a two shift rotation working 24 hours on and 24 hours off duty to increase manpower on duty.

This Applied Research Project is linked to the *Executive Analysis of Fire Service Operations in Emergency Management* course taught at the National Fire Academy because the intent of this project is to develop policies detailing initial damage assessment as described in the Student Manual, Chapter 6 Damage Assessment. Damage assessment is defines as “a gathering of information related to the impact of an event, or series of events, on life and property within a defined area.” In order for any government entity to react to a disaster effectively, the first step in response is to have a detailed picture of what the problem is. An initial or immediate damage assessment is made by the first responders upon notification of the incident or after the natural disaster has passed (Department of Homeland Security, United States Fire Administration, National Fire Academy, 2009, p. SM 6.3-4).

The author has seen first hand the knee jerk reaction community leaders and responders have to an incident that is larger than can be viewed by one person. Emergency responders act how they have been trained by stopping to help the first citizens they come upon and do not get the chance to triage the whole incident. There by missing a larger need for assistance somewhere else. Green Cove Springs was hit by a severe wind storm in 2000 at approximately 1100 hours. The City deployed various department crews to clear roads from downed tree, perform search and rescue for homes, restore power and assist homeowners. An initial damage assessment was

not done throughout the community except as law enforcement or citizens called in problems. As Clay County Emergency Management got involved in the incident, that division aided the City in determining what the damage assessment was. The City did not realize the extent of damage to the electrical power system until evening when it was realized that the City was overwhelmed with the power outages and the existing Electric Department could not fix all the downed power lines themselves. Assistance was then requested from private contractors. The City Electric Department and private contractors worked through the night to have power restored to critical infrastructure such as schools.

The research document will use information collected to identify best practices to develop a policy for CCFR to follow when performing an initial damage assessment after a disaster. The fire chief identified the lack of a plan for initial damage assessment as a shortfall and supported the effort to complete this research project to better prepare the department for a disaster. Due to the location of Clay County in northeast Florida, the expectation of being involved in a weather related disaster is probable. As a participant in the State Emergency Response Plan, CCFR has deployed resources to help other Florida counties and other states in post disaster activities. By establishing a standard operating procedure and conducting training for initial damage assessment, employees will be better prepared to perform these duties at home or in a mutual aid setting. This Applied Research Project is linked to the United States Fire Administration operational objectives which include “to promote within communities a comprehensive, multi-hazard risk reduction plan lead by the fire service organization” and “to respond appropriately in a timely manner to emerging issues”(Department of Homeland Security, United States Fire Administration, National Fire Academy, 2005, p. II-2). The fire service must be prepared to respond to the needs of the community in the event of a disaster. By

having a initial damage assessment policy in place, Clay County Fire Rescue will be prepared to meet the challenges of a disaster with trained personnel familiar with how to assess and report initial findings of damages after an event. The fire service must prove its worth to the community everyday because they expect the fire department to know what to do regarding disaster management.

Literature Review

Literature review was accomplished by review of information at the National Emergency Training Center Learning Resource Center, the State of Florida Emergency Management data and on line sources. Applied Research Paper documents were reviewed to evaluate what others had researched on implementing damage assessment standard operating procedures. NFPA 1600 is the Standard on Disaster/Emergency Management and Business Continuity Programs (2007) which defines damage assessment as “ an appraisal or determination of the effects of the disaster on human, physical, economic, and natural resources”(p. 4).

To perform a literature review of the first research question, “What procedures are used by fire departments and other agencies to perform assessments after a disaster?” a variety of fire department standard operating procedures were reviewed. The fire department’s that provided information regarding damage assessment, have the point of contact information is listed in Appendix A. Additionally, other state and federal resources were reviewed. Prior planning is paramount in surviving a disaster. The City of Lakeland, Florida had just completed an exercise in which emergency management had trained staff personnel in their plan. That weekend Hurricane Charley hit their county. The city was the most prepared because of time taken to train everyone with the emergency plan (Olds, 2005). In a report by Gregory Hoggatt, he concluded what the key elements should be in a rapid windshield survey. There were five key elements

which include roads, infrastructure, structural damage assessment, private damage assessment and habitability. The need for roads to be open after a disaster affects all agencies in their ability to provide assistance. Infrastructure assessment ensures governmental agencies are functional to respond to the needs of the public. The habitability assessment determines the requirements for providing emergency shelter for those that are displaced (Hoggatt, 2006). Richard Windham reported in an Applied Research Paper that results from fire departments surveyed in Texas indicate that a majority of departments utilize standardization for providing efficiency of operations, enhancing safety of personnel and ensuring consistency. Incident damage assessment is based on actual damage observed using less than five separate categories which are defined for damage assessment. The five categories are listed in order of severity from least to most damage. Affected refers to property damage without damage to the structures. Affected would include damage to trees, fences and vehicles on the property. Minor damage is defined as damage to the building that is minor affecting the exterior such as shingles, roofing, windows, siding etc. Major damage is used to describe structural damage to the roof, floors or walls. Destroyed defines damage to a structure that is not repairable and will require demolition. Inaccessible is used to classify property that can not be reached to conduct a damage assessment (Windham, 2008). The Hialeah Fire Department Tactical Guideline for Rapid Damage Assessment Procedures identify that the seven fire stations will be responsible for the assessment in their respective districts. The procedures were developed as a result of an Applied Research Project by Otto Drozd III. The fire station companies are each assigned a front end loader and operator from public works department, a police officer, and an ambulance to facilitate the damage assessment. When applicable, these teams will be pre deployed to the fire stations to be ready to do the damage assessment immediately after the event. The first phase of the assessment

is the fire station facility infrastructure. The second phase prioritizes clearing emergency response transportation corridors and a predetermined systematic assessment of the assigned district that will address the nature, scope and magnitude of the disaster. Training is conducted annually to review the guidelines (Drozd, 2005). Orange County, Florida does not have a formalized procedure concerning windshield surveys, but gives instructions during an event to map damage and report findings back to the Fire Operations Center. Citrus County Fire Rescue windshield assessment includes observations of structural damages, flooding, injuries, fire load, water supply, status of critical resources (hospitals and utilities) and status of transportation capabilities (road accessibility and apparatus availability for Citrus County Fire Rescue). Broward County uses a Rapid Impact Assessment (RIA) that utilizes a grid map with quarter mile grids to assess damages in both unincorporated and municipal areas of the county. The process is intended to take four to six hours to complete. The RIA objectives are to assess the location of visible damage, Assess the need to conduct more detailed assessment or request mutual aid for resources, and to assist in the effective management of emergency response resources. The RIA does not take priority over emergency response or life safety issues. Broward County uses five categories of damage numbered 0-4 and combine flood and wind damage for each category. Each fire company is given pre-assigned grids to complete in the event of a disaster. The reporting process is automated and data is provided via the internet back to the Emergency Operations Center Broward County, 2009). Palm Harbor Fire Rescue participates with Pinellas County to assist with preliminary damage assessment when requested. Normally the initial damage assessment is done by county inspectors. Their department policy for damage assessment focuses the goals to determine impact, obtain Federal assistance and indentify and mark affected structures. Palm Harbor performs search and rescue utilizing a grid system pre-

determined for each fire station (Palm Harbor, 2008). Jacksonville Fire Rescue is responsible for reporting operational information, reports from the public and observed damage to the EOC. The Damage Assessment Unit Leader coordinates the initial assessment with the State of Florida Rapid Impact Assessment Team (RIAT). The assessment identifies the magnitude and severity of damage to structures and infrastructure. The Jacksonville assessment does not reference a windshield survey, but rather details in the Planning Section of the Interagency Coordinating Procedure for the Damage Assessment Unit, the initial survey as the one that is done in coalition with the State survey team (Jacksonville, 2007).

In review of on line information about damage assessment, the author identified that Volusia County, Florida had developed an automated program to perform all phases of damage assessment. The program was developed by Morgan Gilreath, Jr. who is the Volusia County Property Appraiser with help from Becky Jones who is on his staff. Although this information was beyond the scope of the purpose of this research, it is important to note the technological advances being made in Florida for damage assessment. The Federal government previously had the only computer model for damage assessment for detailed damage assessment. Gilreath's program allows for parcel characteristics and values to be preloaded for each property in the county. The program features the ability to coordinate all three levels of damage assessment without having to enter the same data each time a property is reviewed. The data is logged in by who entered the data and can be tracked back to that user identification. Further information or for use of the program go to <http://volusia.org/property/> (Gilreath 2007).

The Larkspur Fire Department, California states that their immediate damage assessment will start with a triage of the fire station and apparatus, followed by conducting damage assessment in the field. A windshield survey is conducted following a prescribed route to view

all target hazards, essential facilities, key transportation routes and infrastructure (City of Larkspur Fire Department, 2000).

The Helena Fire Department, Montana uses the initial damage assessment to determine the general impact and damages to important facilities and resources. The damage assessment provides a brief overview of the impact on citizens and businesses in the impacted areas. Priorities are the restoration of emergency response, control capability and saving lives. The next priorities are assessment of utilities and the immediate emergency needs of the population. The methods of initial damage assessment are an aerial fly over augmented by a windshield survey and citizen reports to support documentation for a disaster declaration (Lewis and Clark County, 2005).

The Virginia Beach Fire Department developed a single page damage assessment snapshot. The assessment form identified four categories of assessment for structure damage which included: no damage, minor, major and destroyed listed by per cent of the structures in that area. Other areas that are listed for assessment are personnel, apparatus, fire station facility, flooding and condition of infrastructure. The personnel section provides for accountability and number/type of injuries sustained. The apparatus section provides information on the damages sustained and if the apparatus remains in service. The facility section refers to the fire station condition, operational status, and access. The status of all communications at the station is included. Infrastructure conditions refer to the status of roadways, bridges and utilities. Journigan recommended additional training be conducted so all participants are well versed on damage assessment and how to fill out the form accurately. The information collected on the damage assessment form has worked well for the Virginia Beach Fire Department (Journigan, 2009).

The State of South Carolina Recovery Plan (2004) provides a quick windshield survey form for damage assessment. The State damage assessment teams are deployed once a coordinated decision is made between the State and the affected county governments. The damage assessment by the local county agency is a rapid assessment to identify the immediate unmet emergency needs of disaster victims, and to assess damages to private and public facilities. Public services are also evaluated to determine what services have been impacted. The State damage assessment is done in one of three ways. Starting at the most general, a fly over is conducted to get an overview when the damage may be so severe that a detailed damage assessment will not be necessary. The next way is a windshield survey, which can be used to assess a large area in a relatively short period. The final assessment is a walk through which is the most thorough and time-consuming methods for damage assessment. The walk through assessment would be done by the State Assessment Teams. The local fire department would likely be doing the windshield survey unless the department has access to a helicopter for an aerial overview. The quick windshield survey allows the local agency to quickly measure the scope of the incident and the initial impact on homes, mobile homes, and businesses. The form is divided into three categories for damage, which include minor damage, major damage and destroyed. The structures are listed into four categories that include homes (single and multi-family), mobile homes, businesses and government facilities. The form lists the number and damaged dollar amount of each category. During the local quick windshield survey, the dollar amount would not be expected to be completed.

In researching what are the requirements in the State of Florida for initial damage assessment for large scale natural disasters by the fire service, the author did not find any documented requirements. Each local jurisdiction uses the local county emergency manager to

determine the criteria to request state assistance for disaster assessment. Generally, when a local jurisdiction is overwhelmed with the ability to respond to and manage an incident that is catastrophic in nature, a request for State assistance is requested. With that request, the State Emergency Operations Center requires a damage assessment as to what has happened and what is needed to stabilize the incident. This information is general in nature, which requires more details, which are collected by the formalized damage assessment teams that are determined by emergency management that comprise other department personnel. Documents were reviewed from the Florida State Division of Emergency Management and the Florida Fire Chief's Association State Emergency Response Plan (SERP). There is little reference to requirements or standards for local government or fire departments to conduct an initial windshield survey or damage assessment. The Florida Division of Emergency Management document that describes the damage assessment process states:

One of the most important elements of a county's response to an emergency or disaster is damage assessment. This process is essential in determining what happened, what the effects are, which areas were hardest hit, what situations must be given priority and what types of assistance are needed (e.g., local, state, or federal). Emergency response can be more effective, equipment and personnel can be better used, and help can be provided quicker if a thorough damage assessment is performed (Florida Division of Emergency Management, 2008).

Based on this information, damage assessment reported to the state should include cause of what happened, geographical areas affected, priority situations, and what type of assistance is needed. Priority situations are left to the interpretation of the individual county affected and resources that are available to mitigate the incident. The components of initial damage

assessment would be geographical areas affected, priority situations and what additional resources are needed to mitigate the disaster or event.

In an email on September 29, 2009, from Randy Napoli, who is the project manager working on the Florida Catastrophic Planning (FCP) project, he stated that a Florida Disaster Assessment Snapshot System was being developed as a statewide system as part of the FCP. This system was developed by the Miami- Dade Fire Rescue Department and revised slightly to be adopted statewide. The intent of this system is to gather only critical information and communicate the information back to the command post or emergency operations center. The ease of the system allows all first responders and civilians to participate in the assessment process. The system obtains the status of widespread damage including critical infrastructure after any catastrophic event. The system is compatible to the Federal government for an all hazards approach to disaster preparedness. The numeric rating system for structural damage is one to four and for flood water damage is a rating of five or six. The rating system has pictures to identify types of damage to match the rating system for reference. This snapshot assessment allows the fire service to complete the process in one to four hours (Miami-Dade, 2007). All fire departments in Palm Beach County use the same rapid impact assessment damage policy as stated in an email from Pete Bergel, Fire Chief of the City of Palm Beach Gardens. The Palm Beach County mimics the Miami- Dade County policy for rapid impact assessment damage (Palm Beach County Fire Rescue, 2009). The south Florida departments that experience hurricanes more frequently had more detailed and practiced policies.

The Florida Fire Chief's Association is the author of the Florida Statewide Emergency Response Plan (SERP). The latest revision of the SERP has included a standardized damage assessment rating schedule for structures and flooding. Structure damage is rated on a scale of

one to four. A one rating indicates little or no damage to the structure. A two rating indicates the structure is damaged, but inhabitable while repairs are made. A three rating indicates the structure is damaged and is uninhabitable. A four rating indicates the structure is totally destroyed. The flood rating scale uses a different set of numbers so as not to confuse ratings for structural damage. The flood ratings are zero, five and six. A zero indicates flood water that does not impede access to the structure. A five rating indicates flooding that impedes access to the structure. A six rating indicates that flood water has entered the structure (FFCA 2009).

To answer the third research question “What does the Clay CEMP require for initial damage assessment for a large scale natural disaster and does it meet state and federal requirements?” the author reviewed the Clay CEMP and interviewed the Clay County emergency manager to get a perspective on the damage assessment process. In the State of Florida, each of the 67 counties is required to have a current comprehensive emergency management plan (CEMP). The county CEMP requirement is specified in Florida Administrative Code 9G-6.0023. The details of this chapter of the Florida Administrative Code address the need for each county to have a plan that will cover the local plan for preparedness, response, recovery and mitigation. The plan provides a detailed process to be used at the local level to initially manage an emergency or disaster as the result of tornadoes, hurricanes, flooding, freezes, extreme temperatures, disease outbreaks, wildfires, terrorism, drought, hazardous materials releases and civil disturbances (Florida Administrative Code, 2001). In 2003, Florida was the first State to receive accreditation through the Emergency Management Accreditation Program (EMAP). Florida’s emergency managers have worked to improve emergency preparedness, response, recovery and mitigation efforts throughout the state currently are going through the process to become the first state to be re-accredited through this national program (Florida Division of

Emergency Management, 2008). The county CEMP is a fluid document and is revised every four years. Changes can be made during the four year period as needed. The Clay County CEMP is due to be revised in 2010. The CEMP contains the basic responsibilities within each department in the county and complies with the National Incident Management System (NIMS) command structure as required by the State Division of Emergency Management. Clay County (2006) stated the following:

Damage assessment is the first and one of the most important steps in the recovery process. It is the basis for determining the type and amount of state and/or federal financial assistance necessary for recovery and mitigation. An initial impact assessment is conducted during the response and immediate recovery phase to support a request for a gubernatorial proclamation and for the state to request a presidential declaration. (p. 114)

The Clay CEMP details the Building Department as the lead agency to perform damage assessment for private property, businesses, public property and infrastructure. The Property Appraisers' Department is responsible for determining damage assessment values for private property. The Fire Rescue Department is not mentioned in the Clay CEMP as being responsible for damage assessment specifically. Damage assessment information is mapped on a Geographic Information System (GIS) map that is color coded. The preliminary damage assessment is reported to the Emergency Operations Center within twelve hours of the disaster. This data is compiled and a dollar estimate of damages is prepared. If the damage is wide spread and severe, a State of Emergency may be declared without the written detailed damage assessment. The next step in damage assessment is that the State of Florida will activate Rapid Impact Assessment Teams to respond to the effected county to assist county officials with an accurate damage

assessment to provide the county with an accurate understanding of the extent of damage and impact to the citizens of Clay County (Clay County, 2006).

The final research question dealt with determining what policies are needed for CCFR to conduct initial damage assessment and ensuring that the policies developed meet current requirements of the State of Florida and the Federal Government. The policies needed for CCFR to perform initial damage assessment need to be specific and detailed to be understandable for the fire rescue field personnel to comply with. The assessment information must be able to be communicated back to the EOC in a timely manner. During a major catastrophic event, it is expected that normal means of communications may be disrupted. Alternative communication plans must be established in the standard operating procedure and practiced prior to an event. Due to the multiple types of disasters that strike northeast Florida, an all hazards approach must be taken when writing standard operating procedures. The policy must be implemented and practiced to be effective in the time of a disaster. The Emergency Management Institute Rapid Assessment Planning Workshop in Emergency Management Resource Guide (1995) states “Only with tested procedures can effective and coordinated collection and reporting of disaster intelligence be assumed” (p. I-8). A systematic survey tool must be identified to expedite damage assessment and provide accurate standardized information for data processing (Duzzny, 2002).

The National Response Framework (NRF) is a Federal guide to how the Nation conducts response to all hazards. The NRF is designed as a scalable, flexible, and adaptable coordinating command structure to unify key roles and responsibilities across the Nation. All entities including government, nongovernment, and private sector organizations are unified to mitigate a disaster. Authority and responsibilities are defined and best practices for managing any size incident are identified. The NRF specifies that every level of government has a responsibility to

develop an all hazards response plan. Hazards include local to state wide catastrophic events ranging from natural disasters to terrorist attacks. After September 11, 2001 most government agencies have followed the NRF to develop all hazard approaches to disaster planning. The response plan focuses on saving lives, protecting property and preserving the environment while preserving the social, economic and political structure of the community. The importance of the initial damage assessment is tied to the first three key actions of the response process. Those three key actions are to gain and maintain situational awareness, activate and deploy resources and capabilities and coordinate response actions. The NRF (2008) stated that “ For an effective national response, jurisdictions must continuously refine their ability to assess the situation as an incident unfolds and rapidly provide accurate and accessible information to decision makers in a user- friendly manner” (p. 32). The Clay County Emergency Operations Center (EOC) and the Florida State EOC are organized using the emergency support function model. This model uses eighteen functional areas to manage an event. The NRF explains that “EOCs may be organized by major discipline (fire, law enforcement, medical services, etc.), by jurisdiction (city, county, region, etc.), by Emergency Support Function (communications, public works, engineering, transportation, resource support, etc.) or, more likely, by some combination thereof” (p. 51). An Executive Fire Officer that worked in Hurricane Charlie in 2004 stated “Being prepared with a plan that can be implemented and remain flexible that everyone is familiar with will be vital to the success of one’s mission following a disaster” (Kilbury, D., 2007).

In summary, the findings of others influenced this research project by identifying the policies used by the south Florida fire departments that have been proven through use to be effective in disaster situations that occur in south Florida. The generic sample and the Salt Lake City standard operating procedure (SOP) for damage assessment published by the Emergency

Management Institute at the National Emergency Training Center were very helpful in drafting the CCFR standard operating procedure (Emergency Management Institute, 1995). The technology used in Broward County will give this project potential to be expanded in the future when funding is available so that engine company crews can enter data on a GIS type mapping program. The checklists that were developed by fire departments helped the author identify the needs of CCFR to be written in a checklist for damage assessment especially for fire station assessment. In reviewing other Applied Research Paper documents, the above referenced SOP was used also. The establishment of the disaster assessment snapshot by Miami Dade Fire Rescue will be a benefit to the standardization of disaster assessment throughout the State of Florida (Miami- Dade, 2007). Many times fire departments design policies without consulting outside sources for information. Those departments, later, have to change their policies to match those already established by others.

Procedures

The identified procedures were used to answer the four research questions to assist the department in developing an initial damage assessment standard operating procedure for Clay County Fire Rescue. The literature review was done using the information found at the National Emergency Training Center Learning Resource Center, State of Florida Emergency Management data, and Clay County Emergency Management documents and on line sources. The author looked at what others had done for applied research papers at the National Training Center Learning Resource Center. Searches were done on Google at <http://www.google.com/> to review information available on line. Specific parameters were selected for advanced searches for only records in English and Adobe Acrobat PDF (.pdf) file type. There were 1,830 sites available for fire department “initial damage assessment” at the Google web site. The author chose to review

sites that described information pertinent to this research purpose. Other sites were reviewed for initial damage assessment both in the State of Florida and in other states. Some of the other state programs were found through the Google search and the National Emergency Training Center Learning Resource Center. State of Florida web sites were accessed by known web sites for state agencies that deal with disaster management and response. The author looked at other Florida fire department policies on initial damage assessment (Appendix B) to determine which ideas could be effectively adopted by this department. Each fire department was contacted through the Florida Fire Chief's Association blast email capability and asked to send a copy of their damage assessment policies for review. There were 24 responses that ranged from not having a damage assessment plan to plans that were used by multiple departments in a geographic area. Each policy was reviewed to determine the feasibility and benefit to be used by CCFR.

The State of Florida Division of Emergency Management data online was researched to determine what requirements are placed on local agencies for performing initial damage assessment after a large scale disaster event. The Acting State Public Assistance Officer, Florida Division of Emergency Management, Bureau of Recovery was contacted for information on initial damage assessment for the local level. State and Federal documents were reviewed for information about local damage assessment and what application was needed for the CEMP. The Clay County CEMP was reviewed to find what requirements are documented for fire department initial damage assessment. The CCFR policy was written and reviewed to meet initial damage assessment criteria and it's effectiveness to provide critical information to the EOC. The policy was reviewed by the Clay County Emergency Manager to ensure the policy would meet the informational needs for initial damage assessment by emergency management.

Limitations were finding any State or Federal reference to specific requirements for initial damage assessment by local entities. Once State assistance is requested and State teams are deployed for damage assessment, the process is governed by State reporting criteria. This criteria includes damage assessment and recovery cost. The public assistance and individual assistance assessment is quantified for eligibility during the State damage assessment. The definition of initial damage assessment is used by the State when the State teams are sent into a damaged area. There is not a common term used for local damage assessment. Fire departments sometimes came up with their own terminology to identify their procedure to differentiate from the State term for initial damage assessment.

Results

The results of this research were analyzed from the literature review and standard operating procedures provided to the author from other fire departments. National standard operating procedure sample documents were reviewed from the Emergency Management Institute for damage assessment.

The first research question was “What procedures are used by fire departments and other agencies to perform damage assessments after a disaster?” there were a wide range of answers to the question ranging from nothing to detailed written procedures to assist emergency managers to determine the need for assistance or to make a disaster declaration. The best practices for initial damage assessment were gathered from several fire department standard operating procedures. The rating system has pictures to identify types of damage to match the rating system for reference. This snapshot assessment allows the fire service to complete the process in one to four hours (Miami-Dade, 2007). All fire departments in Palm Beach County

use the same rapid impact assessment damage policy as stated in an email from Pete Bergel, Fire Chief of the City of Palm Beach Gardens. The Palm Beach County mimics the Miami- Dade County policy for rapid impact assessment damage (Palm Beach County Fire Rescue, 2009). The south Florida departments that experience hurricanes more frequently had more detailed and practiced policies. The purpose for the initial damage assessment was best stated by the Emergency Management Institute which said the following:

The ability for (jurisdiction) to perform a rapid situation assessment accurately and within the first few hours after an incident is critical to providing an adequate response for life threatening situations and imminent hazards that may impact (jurisdiction). Rapid assessment will allow government officials the ability to prioritize response activities, allocate resources, and request mutual aid and State and federal assistance. (p. C-2)

The list of fire departments that supplied initial damage assessment procedures are listed in Appendix B. There are several ARP reports in the National Emergency Training Center Learning Resource Center that identify damage assessment protocols for fire departments across the United States. The author reviewed these policies and protocols to develop the CCFR SOP for Initial Damage Assessment.

The second research question was “What are the requirements in the State of Florida for initial damage assessment for a large scale natural disaster?” The hypotheses by the author that there were specific requirements for fire department’s to conduct initial damage assessment were not found. Eligible types of assistance are listed in Appendix C for the State of Florida was taken from the web site <http://www.floridadisaster.org/brm/Damage%20Assessment.htm>. Guidelines for damage assessment are now just being developed by the Florida Fire Chiefs’ Association for the Statewide Emergency Response Plan. There is no guideline in the Florida Incident Field

Operations Guide (FOG) for initial damage assessment. The FOG is an all hazard approach to incident management developed by the Florida's emergency management agencies (State of Florida, 2006). The latest revision of the Florida SERP has included a standardized damage assessment rating schedule for structures and flooding. Structure damage is rated on a scale of one to four. A one rating indicates little or no damage to the structure. A two rating indicates the structure is damaged, but inhabitable while repairs are made. A three rating indicates the structure is damaged and is uninhabitable. A four rating indicates the structure is totally destroyed. The flood rating scale uses a different set of numbers so as not to confuse ratings for structural damage. The flood ratings are zero, five and six. A zero indicates flood water that does not impede access to the structure. A five rating indicates flooding that impedes access to the structure. A six rating indicates that flood water has entered the structure (FFCA 2009). There are several south Florida counties that have already adopted this system for damage assessment. Two off those counties are Miami- Dade County and Palm Beach County.

The Handbook for Disaster Assistance from the Florida Division of Emergency Management stated that:

Immediately following a disaster, an initial damage assessment must be by the local jurisdiction to assess the impacts of the disaster. This assessment should provide an estimate of the type and extent of damages, including probable costs...When the information has been collected; it is transmitted to the State Emergency Operations center (SEOC), Recovery Branch. (p.7)

The third research question was "What does the Clay (CEMP) require for initial damage assessment for a large scale natural disaster and does it meet state and federal requirements?" Eligible types of assistance are listed in Appendix C for the State of Florida was taken from the

web site <http://www.floridadisaster.org/brm/Damage%20Assessment.htm>. These types of assessment will be information that can be quantified for damage assessment. The CEMP follows the State procedures for progressive assistance requests to the State and then to the Federal government. The Clay County Emergency Management Standard Operating Guidelines (SOG) for Impact Assessment is contained in the CEMP on pages 304-349. The SOG identifies the Impact Assessment to be used immediately after a disaster to identify four main categories of disaster assessment. These areas include the extent and location of damages, number of dead/injured, impact on the county infrastructure and status of local response efforts. In reviewing the Clay CEMP, the Initial Damage Assessment is used to determine the magnitude and severity of the damage to structures and infrastructure. In the event of heavy rainfall, the assessment will determine the level of flooding and damage. The Clay CEMP states that “Damage assessment is the first and one of the most important steps in the recovery process.” (Clay County, 2006). Nowhere in the CEMP does it specify who is responsible for the Initial Damage Assessment. The Building Department is assigned as the lead agency for conducting damage assessment of private property, business, public property and infrastructure. The CEMP further states that the Impact assessment teams must report impact assessment results to the EOC within hours of the disaster. The CEMP goes into great detail about the process that follows the initial damage assessment. The preliminary damage assessment occurs next, which is coordinated by the Planning Section of the EOC. The preliminary damage assessment is due to be completed within twelve hours. If the damages are significant and there is potential for State or Federal assistance, the State of Florida Rapid Impact assessment Team (RIAT) is deployed to assist Clay County with an accurate assessment of damage to local infrastructure and identify the immediate needs of the public. The RIAT functions with local and if needed Federal Assessment

Teams to determine specific dollar amounts for damages. The only mention of Public Safety (Fire and EMS Divisions) in the recovery section lists that this agency will have a support role and will be involved in recovery operations. There was no further mention of responsibilities for Public Safety (Fire and EMS Divisions) in the recovery section. The CEMP addresses municipal fire departments to provide building inspectors from the fire prevention division to perform damage assessment in homes, businesses and public buildings (Clay County, 2006). There is only one municipal fire inspector from the Orange Park Fire Department.

The fourth research question was “What policies are needed for CCFR to conduct initial damage assessment to meet State of Florida Division of Emergency Management and federal requirements?” The progression of damage assessment starts at the local level and proceeds to the State and federal levels as needed based on the amount of damage and assistance needed. The local fire departments need to have a policy in place to address initial damage assessment. Eligible types of assistance are listed in Appendix C for the State of Florida and were taken from the web site <http://www.floridadisaster.org/brm/Damage%20Assessment.htm>. These categories describe the basis for initial damage assessment as apparatus are capable of accessing these areas. Initial damage assessment must first assure the capability of emergency services. These services include law enforcement, fire and rescue response. The author developed a draft standard operating procedure for initial damage assessment for which is listed in Appendix A. The CCFR SOP is based on model procedures found during this research from the Rapid Assessment Planning Workshop Resource Guide and fire department policies reviewed in appendix B. The CCFR SOP will be reviewed internally for corrections and revisions. The results of this research paper will allow the CCFR SOP to be implemented in a timely manner before the 2010 hurricane season starting in June. There will be sufficient time to train personnel

and exercise the Initial Damage Assessment Plan. Waiting until the disaster strikes is too late to learn what emergency management needs to provide a report to the state on damage assessment to receive resources and funding. By having the CCFR SOP in place and having trained personnel ahead of time will result in the CCFR being prepared to perform initial damage assessment in a timely manner.

Discussion

The relationship between the study results and the specific findings of others is evident. The State Florida identified the damage assessment process as one of the most important elements of a county's response to a catastrophic event. The goal for every county is recovery, which starts with an accurate damage assessment to identify the level and extent of damage, what additional resources are needed to provide emergency services, restore the infrastructure and mitigate existing or potential hazards. The research proved that the process of initial damage assessment is called different names, but accomplishes the same objectives. The Miami Dade Fire Rescue process is called a Disaster Assessment Snapshot. The Miami Dade model was tested over several named hurricanes and storms in south Florida (Miami Dade Fire Rescue, 2007). Other counties have adopted the Disaster Assessment snapshot including Palm Beach County and all municipalities in that county. In a personal communication dated September 29, 2009, from Captain Todd Livingston, he stated "The damage assessment request that we the State US&R System are going to go with and recommend to others is the Miami Dade model." Captain Livingston serves as the Task Force Leader for Florida Task Force 3 Urban Search and Rescue Team. The Miami Dade model is designed for any emergency responder to pick up and go right to work using the damage assessment procedure.

The Melbourne Fire Department uses a First in Team (FIT) that is comprised of members from ten agencies. There are three FIT's that are assigned geographical areas of the city. The agencies are law enforcement, fire rescue, public works, building department, utility company, Florida Power and Light, Telephone Company, parks and recreation, American Red Cross and Radio Amateur Civil Emergency Services. The function of the FIT is to reenter an area impacted by a hurricane or other weather event ahead of all others to make an initial estimate of how bad the damage is, where the damage is and what specific resources are needed and in what priority. Each FIT is assigned an area of refuge that is safe to withstand storm impact. The Fire Chief is assigned to the City EOC for communication dissemination. The priority for Melbourne was to complete the damage assessment rather than handle emergency calls. The basic concept was to do the most good for the most people with the fewest resources in the shortest time. A senior fire officer would be designated to go to the EOC to assume the role of Rapid Assessment Coordinator.

The Florida Fire Chief's Association Statewide Emergency Response Plan process is called the Florida Disaster Assessment Snapshot System. The system is designed to evaluate key elements which include: facilities, personnel, apparatus, neighborhood, flooding and target hazards (Florida Fire Chiefs' Association, 2009). The common measuring terminology will be beneficial to everyone who collects the information and those who process the data. The benefit of common terminology is that everyone will be talking about the same conditions. Since this tool is new to the Florida fire service overall, the author expects that improvements will be made to the Disaster Assessment Snapshot System as time goes by and more fire departments use the system.

The Broward County Rapid Impact Assessment System is user friendly for the public to enter damage assessment information from the internet directly to the EOC. The information technology has provided Broward County with the ability to gather information from the public and input it onto one quarter mile square grids for the EOC to do preliminary planning with initial damage assessment information (Broward County, 2009).

The author's interpretation of the initial damage assessment timeline established by Clay County Emergency Management of twelve hours can be reduced considerably to two to three hours for the initial damage assessment using the policy drafted as a result of this research. Emergency Management has operated as a separate division from the Fire Rescue Department and it is time to form a better knowledge base in the fire service for mitigating disaster recovery. The Clay County Fire Rescue Department is a vital part of disaster response and initial recovery. Emergency Management continues to provide assistance to the public through recovery long after the disaster happens. Depending on the frequency of disasters in a community or geographical area, responders do not view disasters as something that can happen to them. The need for common response protocols and standard operating procedures for damage assessment is reinforced by the NRF (U.S. Department of Homeland Security, 2008) which states: Effective response hinges upon well-trained leaders and responders who have invested in response preparedness, developed engaged partnerships, and are able to achieve shared objectives. The players' bench is constantly changing, but a concise, common playbook is needed by all. (p.2)

The implications to Clay County Fire Rescue as a result of this research will be a better understanding of emergency management's role in a catastrophic disaster. Through this research, the author has found a new respect for what emergency managers and planners do to better

prepare the community for a disaster. The adoption of the Initial Damage Assessment Standard Operating Procedure by Clay County Fire Rescue will improve Clay County's ability to report damage estimates to the State and seek State and Federal assistance more quickly. The main objective in this research was to identify the best practices throughout the nation for fire departments to perform initial damage assessment and put these practices into policy for CCFR. There may be a program that can be researched in the future to link GIS with damage assessment for CCFR units in the field to report damage assessment information directly to the EOC by the mobile data terminals that are now being installed in fire and rescue apparatus. The program used in Broward County is one example of utilizing GIS for damage assessment with input from the county and municipal agencies along with input from the public and business entities (Broward County 2009). The policy to be adopted by CCFR is expected to be built upon and improved as the department can afford the technology available to make the process go more efficiently. The fact that Clay County Fire Rescue has a young inexperienced work force, this policy is imperative to improving readiness through training and exercise.

Recommendations

CCFR currently does not have a plan for initial damage assessment. The author recommends that CCFR evaluate and adopt the Initial Damage Assessment Standard Operating Procedure (Appendix A) once it is reviewed internally by the department. The results of this research paper support the need for the fire service to have a damage assessment plan that can be understood and is simple for everyone to follow. As demonstrated in the research, several south Florida fire departments already use a model that is being implemented in the Florida Fire Chiefs' Association Statewide Emergency Response Plan. As with any policy, periodic review is needed to remain current with changes in technology and lessons learned. In order for the policy to be

effective, training must be accomplished to ensure understanding. Conducting an annual exercise for each shift prior to hurricane season will ensure readiness to conduct initial damage assessment for the department. Other hurricane related standard operating procedures can be exercised at the same time including communications and EOC operations.

The differences noted throughout the state on initial damage assessment procedures justify a statewide adoption of a standard policy for all responders. The most logical approach to disseminating an initial damage assessment policy would be to place the policy in the next revision of the Florida Incident Field Operations Guide. This guide is a cooperative effort to provide information for operations by all the emergency management agencies of the State of Florida. The agencies represent both state and local entities. Every emergency vehicle in the state carries this guide on board the vehicle. This would give each responder a quick reference for procedures to follow when performing the initial damage assessment. This would also be helpful when mutual aid resources are called to assist during the first 24 hours of an incident. The mutual aid department would be able to provide initial damage assessment capabilities without any difference to the effected agency protocols.

The author would recommend to future readers that there would be a benefit to research what is available within the researchers' state first before researching other state programs. The attitudes of the organization can cause a program to fail or succeed from the start. The fire service generally does not have a clear understanding of the important role that emergency management plays in a catastrophic disaster. The executive fire officer should develop a close working relationship with emergency management in his or her community before a disaster strikes. The importance of understanding your role in a disaster occurs before the disaster through training and exercise. Any catastrophic disaster overwhelmed emergency services. By

having written standard operating procedures to follow in a disaster situation, emergency responders can bring order out of chaos. Planning for a disaster is the first step for being prepared.

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Appendix A

CCFR Standard Operating Procedure

CLAY COUNTY FIRE RESCUE - OPERATIONS		
RAPID DAMAGE ASSESSMENT	page 1 of 6	10/30/2009

PURPOSE

The intent of Clay County Fire Rescue to perform a damage assessment accurately within the first few hours after a man made or natural disaster is critical to provide Emergency Management a snap shot of the impact area including life threatening situations and imminent hazards that may affect the citizens and environment of Clay County. The Rapid Damage Assessment will allow the Emergency Operations Center the ability to prioritize emergency response, determine resources capable to respond, allocate resources, determine needs and request mutual aid, State and Federal aid.

RESPONSIBILITY

All personnel shall be able to follow this policy with or without direction using good judgment due to communications possibly being disrupted due to the disaster. Each officer shall be responsible first and foremost for the safety of personnel assigned to his/her command. Rapid Damage Assessment is one of the most important steps to be completed post disaster. Each company officer will be responsible to conduct a Rapid Damage Assessment in their assigned fire district. Each Battalion Chief will ensure the Rapid Damage Assessment data is reported to the Emergency Operations Center from each fire district including the municipalities.

POLICY

1. The Rapid Damage Assessment will start immediately after the disaster has occurred by order of the Fire Chief or his designee. In the event that the communications is disabled, on duty crews should start the initial damage assessment in their district. The Rapid Damage Assessment is broken down into three (3) categories.
 - A. Fire station capabilities assessment.
 - B. Fire district assessment.
 - C. Reporting.
2. Fire Station Capability Assessment.
 - A. Personnel assigned to the fire station will be evaluated for injuries and treated accordingly.
 - B. Apparatus shall be inspected for damage and response capability.

- C. Station officers will perform a rapid assessment of the building, regards to damage, utilities, communications phone/fax/internet/radio and habitability.
 - D. This information will be forwarded to the Communications Center and Logistics prior to commencing the fire district Rapid Damage Assessment.
3. Fire District Assessment - The Rapid Damage Assessment will be done to develop a snapshot of the damage to determine the level of Emergency Operations Center activation, disaster declaration and assistance required to mitigate the disaster.
- A. Station Captains shall pre-designate travel routes to be driven by engine companies to obtain assessment of high risk facilities, shelters, primary transportation routes, critical infrastructures, utility facilities, trailer parks and neighborhood conditions.
 - B. Damage assessment guidelines will follow the FFCA Statewide Emergency Response Plan.
 - 1) Structural Damage Scale 1-4 numbering system.
 - 1: Little or no damage to the structure
 - 2: Structure is damaged but habitable while being repaired
 - 3: Structure is damaged and inhabitable
 - 4: Structure is totally destroyed
 - 2) Flood damage 0, 5, 6 numbering system.
 - 0: Flood water that does not impede access to the structure
 - 5: Flood water that does impede access to the structure
 - 6: Flood water inside the structure
 - 3) Fire Department injury assessment 0-4 numbering system.
 - 0: No injuries all personnel accounted for
 - 1: Minor injuries that do not require transport to the hospital
 - 2: Serious injuries that require transportation to the Hospital
 - 3: Multiple serious injuries
 - 4) Fire Department emergency response unit assessment 0-3 numbering system.
 - 0: All units in service
 - 1: All units are in service but need some repairs
 - 2: A specific unit or unit(s) are out of service
 - 3: All units are out of service

- C. Due to the diversity of population density in Clay County it is not expected that the Rapid Damage Assessment will identify all problems or damages due to a catastrophic event. Rather, the fire stations will be able to provide an initial overview of damages to determine criteria for a disaster declaration. Resources will be increased to perform detailed assessment of a disaster prone area once priorities are established through out the County.
- D. There are limited situations that would necessitate discontinuing the Rapid Damage Assessment. These situations would include life threatening injuries and hazards that can be rapidly mitigated that would affect a large number of people. Rapid Damage Assessment is similar to EMS triage, in that the Rapid Damage Assessment provides for the greater good for everyone in the disaster area so additional resources can be deployed to help the public. If an incident is geographically specific to one area of the County, the Battalion Chief may relocate resources to assist the effected fire districts with damage assessment or stage resources for deployment upon completion of the damage assessment or direction of the Emergency Operations Center for emergency response. Rapid Damage Assessment will stop if:

- 1) Weather conditions change and become unsafe for personnel to continue. Personnel should retreat to an area of refuge and report conditions to the Communications Center.

Roadways are inaccessible due to debris or flooding. A Rapid Damage Assessment should be recorded on what can be seen from a good vantage point possibly the roof of the fire station. Report the conditions as an average for the majority of structures visible from you location.

- E. Once the Rapid Damage Assessment process is completed and reported, the Communications Center will broadcast the return to the emergency response mode of operation by call priority.

TRAINING

The Rapid Damage Assessment procedure will be exercised annually in May for each shift to evaluate the effectiveness of this SOP and recommend revisions. The scheduled training will be in cooperation with Clay County Emergency Management.

SCOPE

This SOP establishes procedures following a man made or natural disaster to conduct initial damage assessment by the Clay County Fire Rescue to provide Emergency Management a snap shot of damage and needs though out Clay County. The policy is based on researched policies developed nationally and in the State of Florida.

REFERENCES

Florida Fire Chief's Association Statewide Emergency Response Plan (October 2009)

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Clay County Emergency Management Plan (2006)

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City of Miami CEMP (2005)

Submitted by: Richard Knoff, Deputy Chief	Approved by: Lorin Mock, Fire Chief
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Clay County Fire Rescue Rapid Damage Assessment Report

Station # _____ Date _____ Completed By _____

Facility

Operational:	Yes _____	No _____	Comments _____
Utilities:	Yes _____	No _____	Comments _____
Generator:	Yes _____	No _____	Comments _____
Communications:	Yes _____	No _____	Comments _____
Personnel Injuries	Yes _____	No _____	Comments _____

Apparatus: In service _____ Damaged _____ Out of Service _____

Describe problems

Access to perform district assessment

Time reported _____

STRUCTURAL STATUS

	1	2	3	4
Single Family				
Mobile Homes				
Multi Family				
Businesses				

FLOODING

Area	5	6

STATUS OF IMPACT TO THE INFRASTRUCTURE

Facility or Service	Description of Impact
Roadways and Bridges (include traffic control and signing, etc.)	
Communications (telephone, radio, satellite, etc.)	
Health Care (hospitals, urgent care centers, clinics, etc.)	
Water Treatment (include water distribution systems)	
Waste Water Treatment	
Electric Utilities	
Other (specify)	

Time reported _____

Appendix B

Fire Department Damage Assessment Policy Contacts

Greg Anglin
Assistant Fire Chief
Melbourne Fire Department
1500 Hickory Street
Melbourne, Florida 32901
321-674-5866

Peter T. Bergel, Fire Chief
City of Palm Beach Gardens
561-799-4300

Art Bousquet, MS, EFO, CFO
Deputy Fire Chief
Hallandale Beach Fire-Rescue
121 SW 3rd Street
Hallandale Beach, FL 33009
954.457.1474

Richard S. Brown
35th Battalion - Alpha Platoon
Operations Division
Fort Lauderdale Fire-Rescue
(561) 302 – 4170

Juan Farach
Emergency Management Coordinator
City of Sunrise
777 Sawgrass Corporate Parkway
Sunrise, FL 33325

Gary Frazier
Jacksonville Beach Fire Department
325 2nd Avenue South
Jacksonville Beach, FL 32250
(904)247-6202

Ralph Franklin
Assistant Fire Chief
Citrus County Fire Rescue
3600 W. Sovereign Path Suite 291

Lecanto, FL 34461
(352) 527-5406

Captain Pete Gomez
Executive Assistant to the Fire Chief / Deputy Emergency Manager
City of Miami Fire-Rescue
1151 NW 7 Street
Miami, Fl. 33136
305.416-5430

Donald Hall, Deputy Director
Emergency Preparedness Division
Jacksonville Fire Rescue Department
515 N. Julia Street, 4th Floor
Jacksonville, Florida 32202
(904) 630-7867

Gregory A. Hogatt B.A. EFO
Deputy Chief - Fire Support Service Bureau
City of Orlando Fire Department- One City Commons
400 South Orange Avenue - Orlando, Florida 32801
(407) 246-3992

Capt. Todd Livingston
Task Force Leader
FLTF -3 Urban Search & Rescue
St. Petersburg Fire & Rescue
400 Dr. M.L.King Street South
St. Petersburg, Fl. 33701
727-892-5590

Jo-Ann Lorber, EFO, CFO, MIFireE
Captain -EMS Bureau
Fort Lauderdale Fire-Rescue
(954) 828-6809

Craig M. Maciuba, Deputy Chief
Palm Harbor Fire Rescue
250 West Lake Rd.
Palm Harbor, FL 34684
(727) 784-0454

C. Bryan Parks
Chief Fire Code Compliance Officer

Broward County Board of Rules and Appeals
1 N. University Drive
3500 "B"
Plantation, Florida 33324
(954) 765-4500

Joyce Taylor, Special Projects
Orange County Fire Rescue Department
P.O. Box 5879
Winter Park, FL 32793
407-836-9116

John Tomaszewski, Assistant Fire Chief
Delray Beach Fire-Rescue Department
501 West Atlantic Avenue
Delray Beach, FL 33444
(561) 243-7420

Wayne E. Watts, Jr. Division Chief of Training
South Walton Fire District
911 N. CR 393, Santa Rosa Beach, FL 32459
(850) 267-1298

Appendix C

Eligible Types of Assistance for Florida

1. Public Assistance Categories- Public damage can include any damage incurred by a structure or facility which is owned by a public or private non-profit entity. To be eligible, the damages must fall into one of the seven basic categories listed below.
 - A. Debris Clearance- This category includes all storm induced debris on non-federal public roads, including the right-of-way, non-federal public waterways, other public property, and private property when undertaken by local government forces. It can also cover the cost of demolition of public structures if those structures were made unsafe by the disaster.
 - B. Emergency Protective Measures-This category addresses the need to provide appropriate emergency measures designed to protect life, safety, property, and health (i.e., barricades, sand bags and safety personnel).
 - C. Road System-This category addresses damages to non-federal roads, bridges, streets, culverts, and traffic control devices.
 - D. Water Control Facilities-Eligible damages under this category include costs to repair or replace dikes, dams, drainage channels, irrigation works, and levees.
 - E. Building and Equipment- Eligible damages under this category include costs to repair public buildings and equipment, supplies/inventories that were damaged and transportation systems such as public transit systems.

F. Public Utility Systems- Under this category, assistance is available for damaged water systems, landfills, sanitary sewerage systems, storm drainage systems, and light/power facilities.

G. Other- The "other" category includes park and recreational facilities, or any other public facility damages that do not reasonably fit in one of the other six categories.

2. Individual Assistance Categories- Individual damage assessment is to determine the extent to which individuals and private businesses have been impacted by the disaster. Two basic categories of eligible individuals exist and are listed below.

A Damage to Homes- A person whose residence has been damaged due to a disaster may qualify for various forms of disaster assistance. When damage assessors go into the field, they will estimate the degree of damage to the home, evaluate the victim's insurance coverage, estimate the victim's income, and determine the habitability and type of the victim's home.

B. Damage to Businesses- Privately-owned businesses that were damaged or destroyed by the disaster can qualify for individual assistance programs. The same procedures used to assess damages to homes are used to quantify damages, as well as determine the impact those damages will have on the community. Loss of a business may result in lost jobs, income, etc., to the individual owner and employees.